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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,574	09/29/2003	Koji Yamada	57454-980	9405

7590 02/03/2005

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EXAMINER	
LE, DANG D	

ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 02/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/671,574	Applicant(s) YAMADA, KOJI	
	Examiner Dang D Le	Art Unit 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 14-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/29/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 14-25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/2/04.
2. Applicant's election without traverse of claims 1-13 in the reply filed on 12/2/04 is acknowledged.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4, 6, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. (6,464,472) in view of Chen et al. (4,841,184).

Regarding claim 1, Sekiguchi et al. shows a magnetic bearing device comprising:

- A rotary shaft (2-1) carrying a fan (2) rotating at a variable speed in a chamber (1) holding a variable gas pressure;
- A motor (8) rotating said rotary shaft;
- A magnetic bearing (4, 5) holding said rotary shaft; and
- A control circuit (not shown) for controlling the operation of the device.

Sekiguchi et al. does not show a control circuit changing a parameter in feedback control performed for holding said rotary shaft in a position allowing stable rotation of said fan in accordance with a load applied to said magnetic bearing.

Chen et al. shows a control circuit (Figures 1-7) changing a parameter (current) in feedback control performed for holding said rotary shaft in a position allowing stable rotation of the shaft in accordance with a load (incidental thrust loads) applied to said magnetic bearing for the purpose of reducing vibration.

Since Sekiguchi et al. and Chen et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to make a control circuit that can change a parameter in feedback control performed for holding the rotary shaft in a position allowing stable rotation of the fan in accordance with a load applied to the magnetic bearing as taught by Chen et al. for the purpose discussed above.

Regarding claims 2, 4, 6, and 9-12 it is noted that Sekiguchi et al. and Chen et al. also shows all of the limitations of the claimed invention.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. in view of Chen et al. and further in view of Heshmat et al. (6,770,993).

Regarding claim 3, the magnetic bearing device of Sekiguchi et al. modified Chen et al. includes all of the limitations of the claimed invention except for the use of a low pass filter.

Heshmat et al. uses a control circuit (Figure 12) with a low pass filter (728) for the purpose of controlling the stiffness of the magnetic bearing.

Since Sekiguchi et al., Chen et al., and Heshmat et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to utilize a low pass filter as taught by Heshmat et al. for the purpose discussed above.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. in view of Chen et al. and further in view of Takahashi et al. (6,111,333).

Regarding claim 5, the magnetic bearing device of Sekiguchi et al. modified by Chen et al. includes all of the limitations of the claimed invention except for the control circuit determining the load based on an output of a motor drive device driving the motor, and changing the parameter in accordance with the determined load.

Takahashi et al. uses the output of the motor drive device (52 to 51) the purpose of controlling the magnetic bearing.

Since Sekiguchi et al., Chen et al., and Takahashi et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to determine the load based on an output of a motor drive

device driving the motor, and changing the parameter in accordance with the determined load as taught by Takahashi et al. for the purpose discussed above.

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. in view of Chen et al. and further in view of Lewis et al. (5,347,190).

Regarding claims 7 and 8, the magnetic bearing device of Sekiguchi et al. modified by Chen et al. includes all of the limitations of the claimed invention except for the convolution calculation.

Lewis et al. shows the use of convolution calculation and Fast Fourier Transform for the purpose of obtaining frequency spectrum quickly.

Since Sekiguchi et al., Chen et al., and Lewis et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to use of convolution calculation and Fast Fourier Transform as taught by Lewis et al. for the purpose discussed above.

8. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sekiguchi et al. in view of Chen et al. and further in view of Suzuki et al. (6,809,448).

Regarding claim 13, the magnetic bearing device of Sekiguchi et al. modified by Chen et al. includes all of the limitations of the claimed invention except for the excimer laser device.

Suzuki et al. shows the excimer laser device for the purpose of making a laser apparatus.

Since Sekiguchi et al., Chen et al., and Suzuki et al. are all from the same field of endeavor; the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to include a magnetic bearing in a laser apparatus as taught by Suzuki et al. for the purpose discussed above.

Information on How to Contact USPTO

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dang D Le whose telephone number is (571) 272-2027. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

1/31/05



DANG LE
PRIMARY EXAMINER